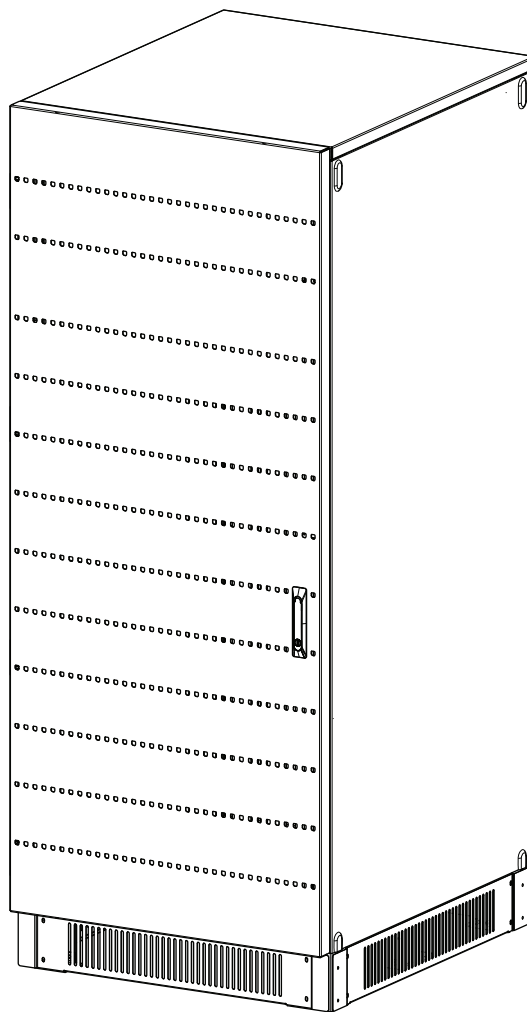


**INSTALLATION
AND OPERATING
MANUAL**

MODULYS GP

Modular hot-swap battery cabinet-UL

EN
























1. Safety standards

1.1 Important safety instruction

SAVE THIS INSTRUCTION - This manual contains important instructions for models M4-BH-OxS-009VU where "x" goes from 3 to 8, that should be followed during installation and maintenance of the UPS and batteries.


















This manual should be kept carefully in a safe place near the UPS, so that it can be consulted by the operator at any time for any information that may be needed regarding correct use of the unit. Read the manual carefully before connecting the unit to the a.c. mains supply and to the downstream appliances. Before the UPS is put into commission, the user must be perfectly familiar with its operation, with the position of all the controls and with the technical and functional characteristics of the unit, so as to ensure there will be no risk to any persons or to the appliance itself.

	CAUTION: Do not open or mutilate batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.
	CAUTION: Do not dispose of batteries in a fire. The batteries may explode.
	CAUTION: Risk of Electric Shock - Battery circuit is not isolated from ac input, hazardous voltage may exist between battery terminals and ground. Test before touching.
	WARNING: Care shall be taken not to wear clothes and footwear which may build up electrostatic charge. Absorbent cloth moistened only with water shall be used for battery cleaning. Other cleaning agents may result in built up of static charge or may damage the battery cases.
	NOTE: Use Personal Protective Equipment (PPE) when carrying out any work on the unit.
	NOTE: When carrying out electrical installation, all applicable standards specified by the NEC and the electricity supplier must be observed. All national standards applicable to batteries must be observed. For further information refer to Technical specification chapter.
	NOTE: Only use accessories recommended or sold by the manufacturer.
	NOTE: Batteries must only be replaced with batteries recommended or sold by the manufacturer. Batteries must only be replaced by qualified technicians.
	NOTE: If using cabinets not supplied by the manufacturers of the UPS, it is the installer's responsibility to check the electrical compatibility and the presence of appropriate protection devices between the UPS and the battery cabinet (fuses and switches of sufficient capacity to protect the cables from the UPS to the battery cabinet). As soon as the UPS is switched on (before closing the battery switches) the battery parameters must be verified accordingly (voltage, capacity, number of elements, etc.) on the mimic panel menu. If the values indicated on the battery cabinet data plate are different from those shown on the mimic panel, please correct the settings.
	CAUTION: A battery can present a risk of electrical shock and high short circuit current. The following precautions should be observed when working on batteries: <ul style="list-style-type: none"> • remove watches, rings or other metal objects • use tools with insulated handles • wear rubber gloves and boots • do not lay tools or metal parts on top of batteries • disconnect the charging source prior to connecting or disconnecting battery terminals • determine if battery is inadvertently earthed. If inadvertently grounded, remove source from ground. Contact with any part of a grounded battery can result in electrical shock. The likelihood of such shock can be reduced if such grounds are removed during installation and maintenance (applicable to equipment and remote battery supplies not having a grounded supply circuit).
	WARNING: Batteries shall be neither connected nor disconnected when current is flowing. Isolate the circuit elsewhere first.
	WARNING: Before carrying out any operations, ensure that: <ul style="list-style-type: none"> • the switches located inside the battery cabinet are open • the UPS is not live and all mains or battery switches are open • the switches upstream of the UPS are open • wait approx. 5 minutes for the unit to discharge completely.

	NOTE: Connect the PE ground conductor before making any other connections.
	DANGER! RISK OF ELECTRIC SHOCK: Disconnect all power sources before carrying out any operations on the unit (cleaning and maintenance, connection of appliances, etc.).
	DANGER! RISK OF ELECTRIC SHOCK: Do not interfere with the disconnecting switches on the unit while the UPS is running on battery power.
	DANGER! RISK OF ELECTRIC SHOCK: There is no insulation between the batteries and the mains supply therefore it is extremely dangerous to touch any parts of the accumulator battery.
	WARNING: Strictly observe the following: <ul style="list-style-type: none"> • polarity of each individual string: cabling errors with inversion of battery polarity may cause permanent damage to the equipment • cable cross-section (refer to Electrical Requirements chapter).
	NOTE: As soon as the UPS is switched on (before closing the battery switches) the battery parameters must be verified accordingly (voltage, capacity, number of elements, etc.) on the mimic panel menu. If the values indicated on the battery cabinet data plate are different from those shown on the mimic panel, please correct the settings.
	NOTE: If the unit needs to be disposed of it must be given to companies specialising in the disposal of the system's constituent materials.
	NOTE: The batteries are toxic waste. If the battery cabinet needs to be scrapped it is essential to entrust the equipment solely and exclusively to firms specializing in the disposal of the materials making up the system. These are obliged to break up and dispose of the various components in accordance with the legal provisions in force in the country where the system is installed.
	NOTE: Any use other than the specified purpose will be considered improper. The manufacturer/supplier shall not be held responsible for damage resulting from this. Risk and responsibility lies with the system manager.

1.2 Description of symbols

All interior and exterior precautions and warnings on labels and plates on the equipment should be complied with.

	UL 1778; CSA-C22.2 NO.107.3-05; MET file E114654		The electrolyte corrodes metals and burns the skin and all parts of the human body.
 5 min.	Waiting time before operating		WARNING! Risk of explosion! Avoid short circuits! Never place tools or metal objects on the accumulators.
	DANGER! High voltage (black/yellow)		Wear safety goggles and suitable clothing.
	Protective earth terminal (PE)		Read the user instructions carefully. Read the user manual before performing any operations.
	Read the user manual before using the unit		Wear protective gloves and clothing.
	Do not smoke, use naked flames or generate sparks in the vicinity of the accumulators.		In the event of contact with the eyes, wash immediately with plenty water and call a doctor. Call a doctor immediately in the event of accidents or illness.
	It is forbidden for non-qualified personnel to work on the batteries.		The unit MUST be handled by at least two people.
	Accumulators are heavy! Use suitable transport and lifting equipment to work safely.		Batteries and related parts contain lead. Lead is dangerous to health if ingested. Wash hands after handling!
	Connecting accumulators in series creates hazardous voltages.		

WARNING LABEL

The warning label provided identifies the battery room.

The label should be placed outside the battery room in a visible position.



2. Environmental requirements and handling



NOTE!

Before carrying out any operations on the unit read the Safety standards chapter carefully.

2.1 Environmental requirements

Install the unit in a technical room which is only accessible to skilled technicians. The room must be:

- of a suitable size;
- adequately ventilated(1);
- clean;
- free from conductive, inflammable, explosive and corrosive items;
- maintained at a temperature between 32 °F and 104 °F.

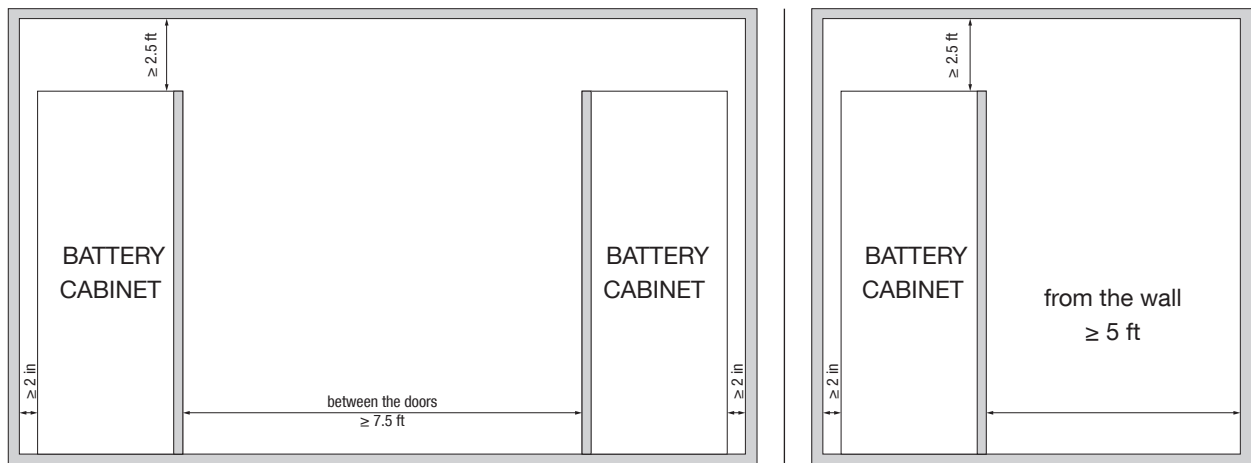
The unit is not designed for outdoor use. Do not expose the unit to direct sunlight.

The unit must not be installed in a conductive, inflammable, explosive and corrosive atmosphere.

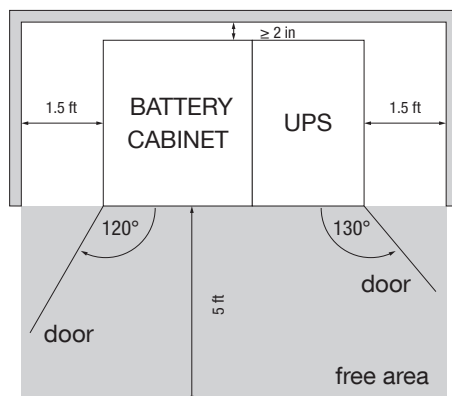
See TECHNICAL SPECIFICATIONS.

1. In accordance with UL 1778.

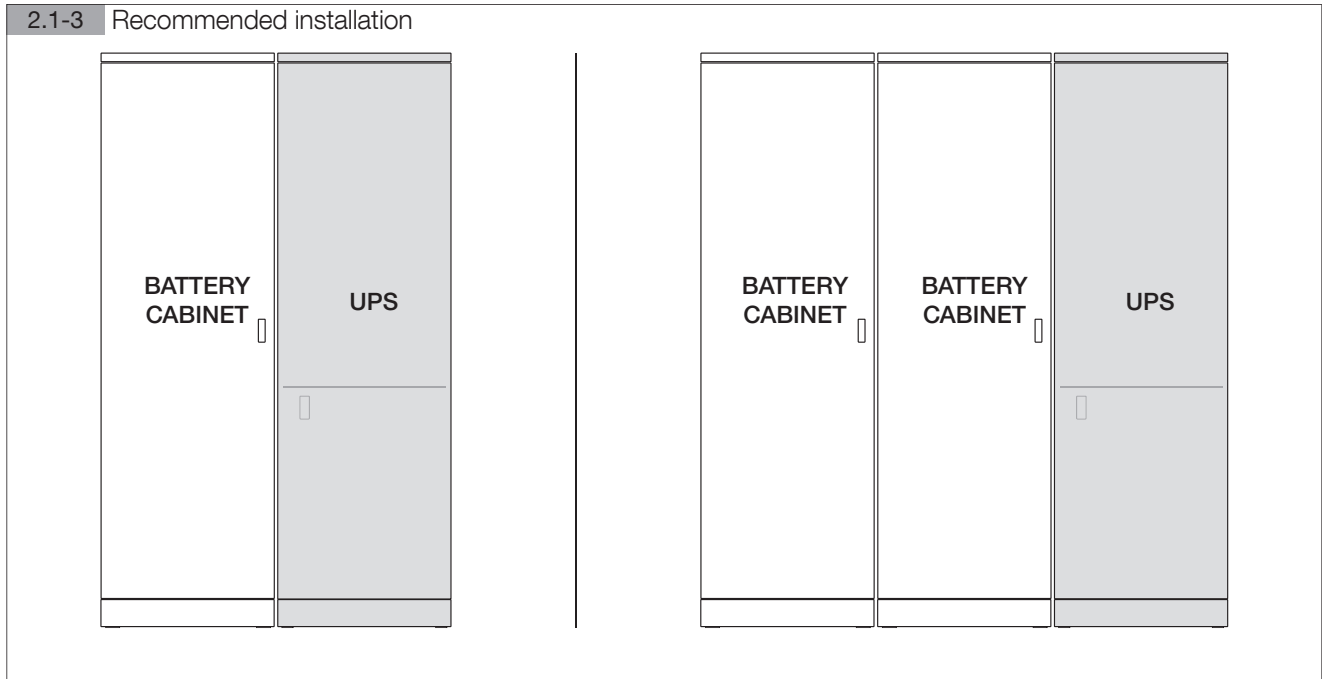
2.1-1



2.1-2



CORRECT POSITIONING






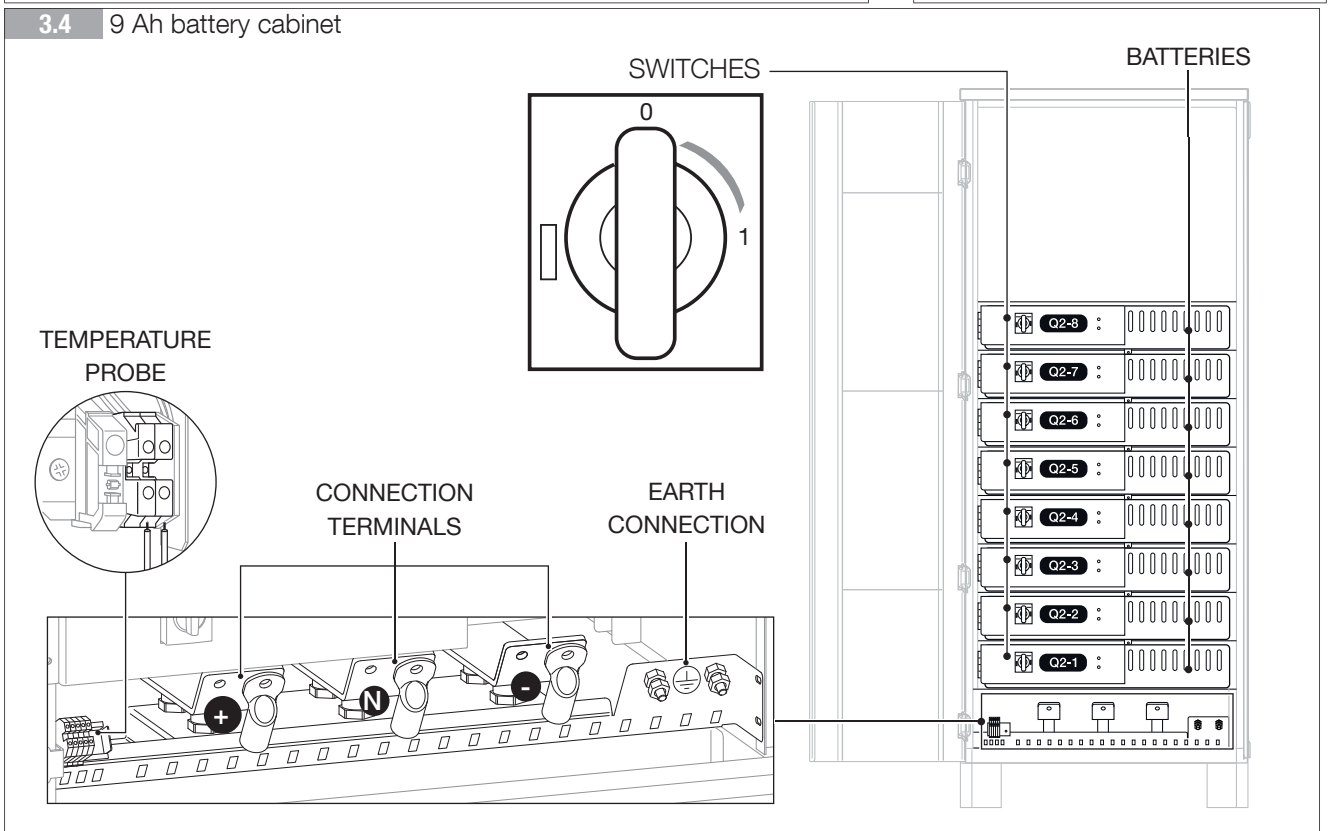
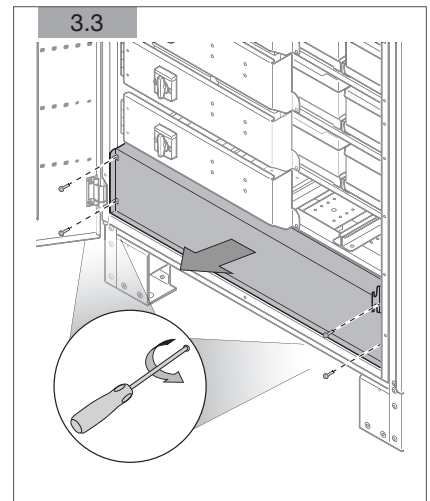
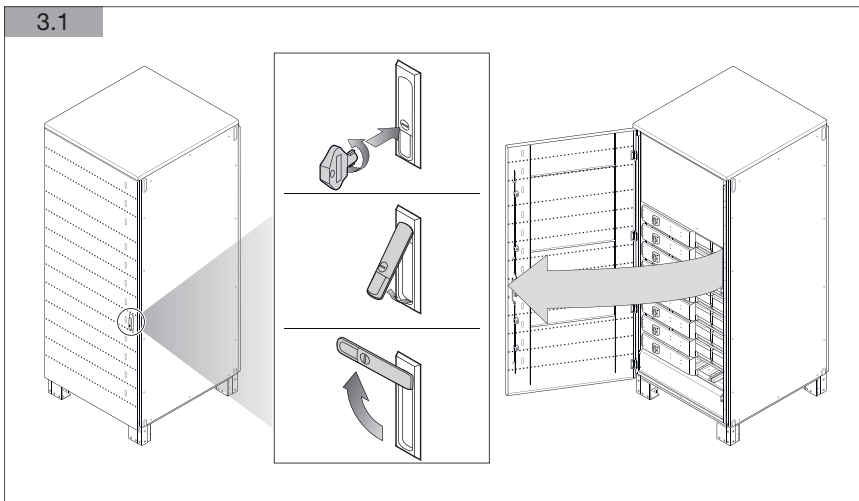
2.2 Handling

- The packaging guarantees the stability of the unit during shipping and physical transfer.
- The unit must remain in a vertical position during all shipping and moving operations.
- Ensure that the floor is strong enough to support the weight of the unit.
- Carry the packaged unit as close as possible to the installation site.




	WARNING! HEAVY WEIGHT! Move the unit using a forklift truck taking the utmost caution at all times.
	The unit MUST be handled by at least two people.
	The unit can be moved with a maximum of eight battery shelves installed.
	Do not move the unit by putting pressure on the front door.
	When moving the unit on even slightly sloping surfaces, use the locking equipment and braking devices to ensure that the unit does not fall over.
	When the equipment is transferred from a cold to a warm place wait approx. two hours before putting the unit into operation.
	CAUTION IF DAMAGED. If the unit is found to be damaged externally or internally, or any of the accessories are damaged or missing, contact SoCOMEC.

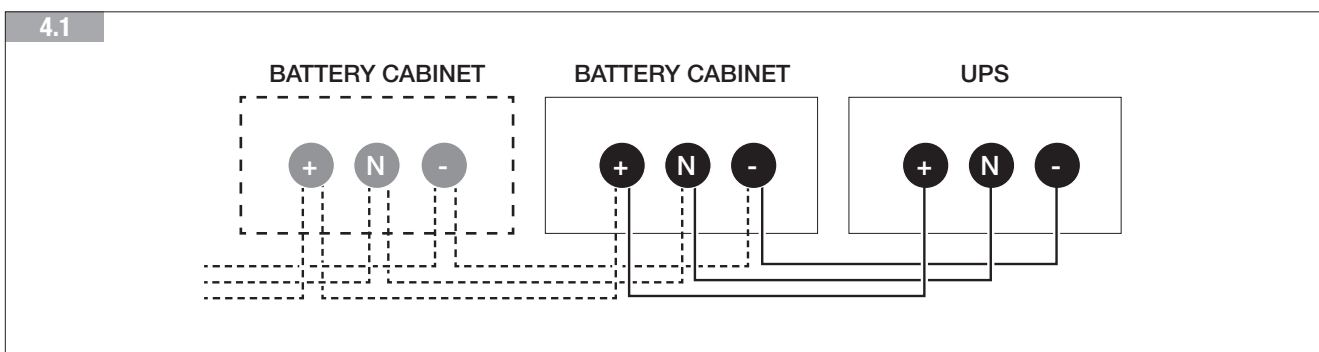
3. Overview

	<p>NOTE! Before carrying out any operations on the unit read the Safety standards chapter carefully.</p>
	<p>WARNING! Before carrying out any operations, ensure that:</p> <ul style="list-style-type: none"> • the switches located inside the battery cabinet are open; • the UPS is not live and all mains or battery switches are open; • the switches upstream of the UPS are open. <p>Wait approx. 5 minutes for the unit to discharge completely.</p>
	<p>Cablings errors with inversion of battery polarity may cause permanent damage to the equipment.</p>

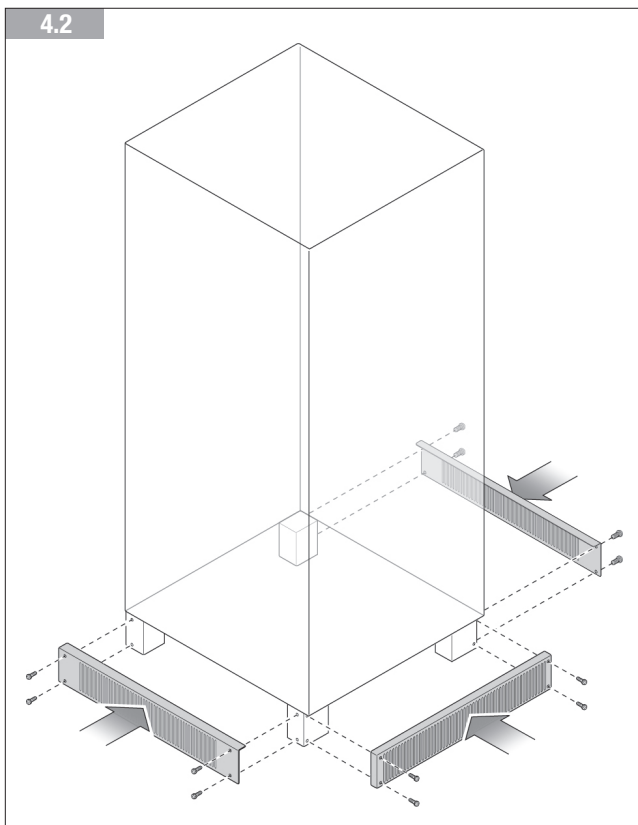


4. Connections

	NOTE! Before carrying out any operations on the unit read the Safety standards chapter carefully.
	WARNING! Before carrying out any operations, ensure that: <ul style="list-style-type: none">• the switches and fuse holders located inside the battery cabinet are open;• the UPS is not live and all mains or battery switches are open;• the switches upstream of the UPS are open;• Wait approx. 5 minutes for the unit to discharge completely.
	As soon as the UPS is switched on (before closing the battery switches) the battery parameters must be verified accordingly (voltage, capacity, number of elements, etc.) on the mimic panel menu. If the values indicated on the battery cabinet data plate are different from those shown on the mimic panel, please correct the settings.



AFTER CONNECTING



Rear cable entry



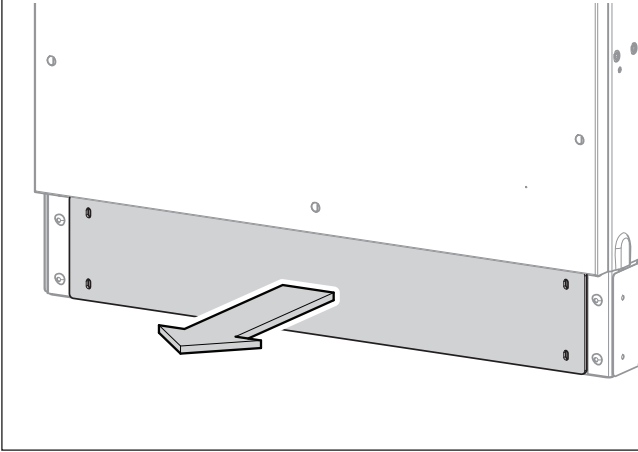
DANGER!

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

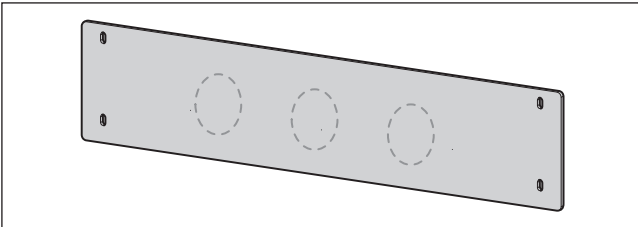
Do not drill or punch holes for cables or conduits with the gland plate installed and do not drill or punch holes in close proximity to the UPS.

Failure to follow these instructions will result in death or serious injury.

1. Remove the lower back aluminium gland plate.










2. Drill/punch holes for power cables/conduits in the aluminium gland plate.

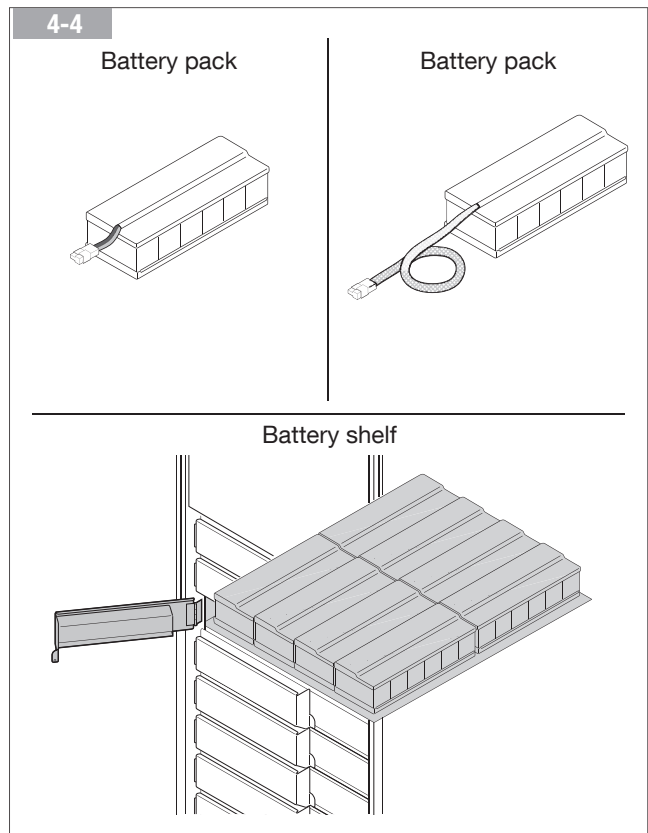
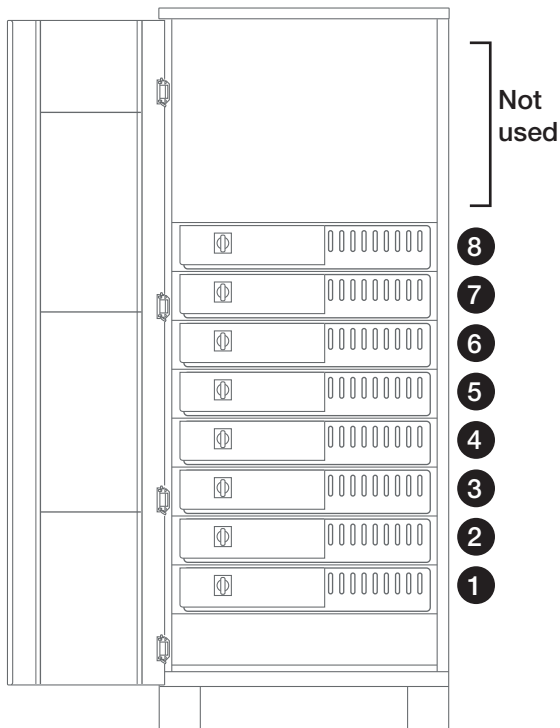


3. Install conduits (not provided), if applicable.
4. Install the aluminium gland plate in the rear of the UPS.

OTHER CONNECTIONS

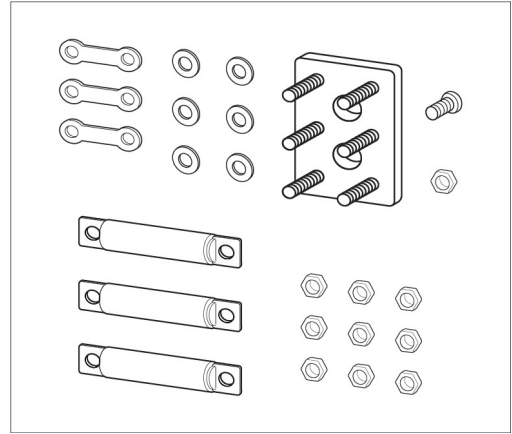
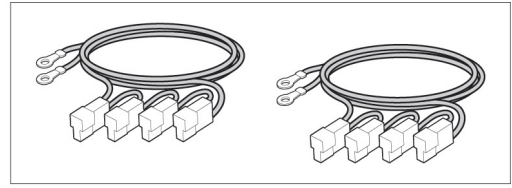
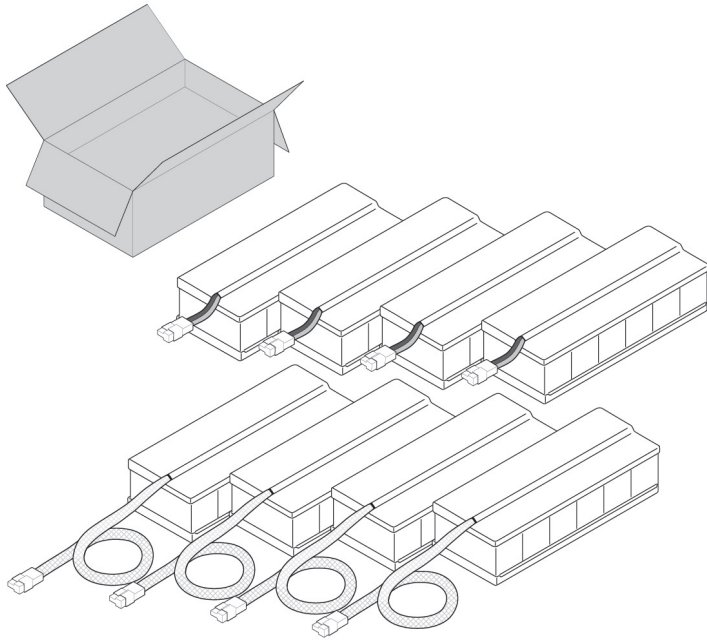
	WARNING! RISK OF TIPPING OVER! The battery shelves must be inserted from the bottom upwards and removed from the top downwards to ensure the unit remains stable.
	The battery shelves have to be installed in an alternating fashion as shown in the diagram.
	WARNING! At least one battery shelf must be matched with one power module.
	WARNING! Before removing any battery shelves, ensure that the remaining power modules can support the load.
	WARNING! When batteries are added or removed, the recharge setting parameters must be verified.
	WARNING! RISK OF ELECTRIC SHOCK! The following precautions must be observed when working on batteries: <ul style="list-style-type: none"> - remove watches, rings or other metal objects; - use tools with insulated handles; - wear rubber gloves and boots; - do not lay tools or metal parts on top of batteries; - disconnect the charging source prior to connecting or disconnecting battery terminals; - determine if battery is inadvertently earthed. if so remove source from the earth connection. Contact with any part of an earthed battery can result in electrical shock.
	NOTE! Follow the instructions for correct insertion.

4-3 Battery shelves: connection order

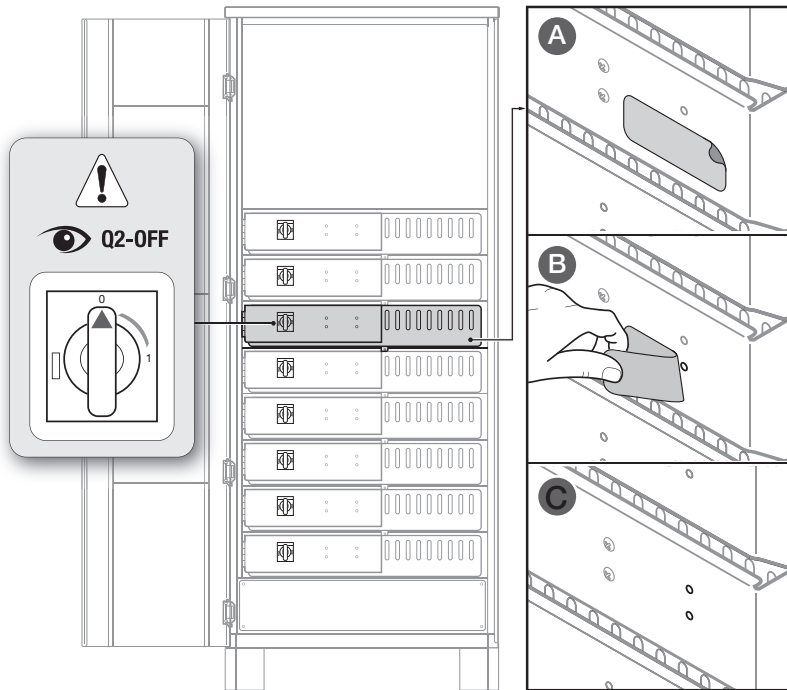


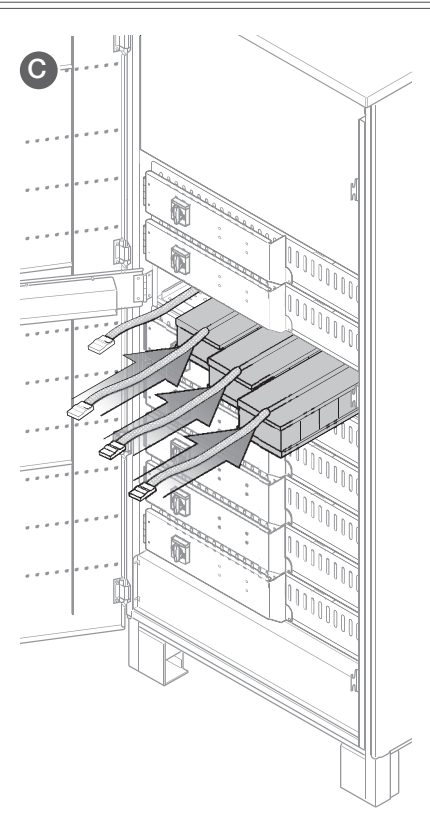
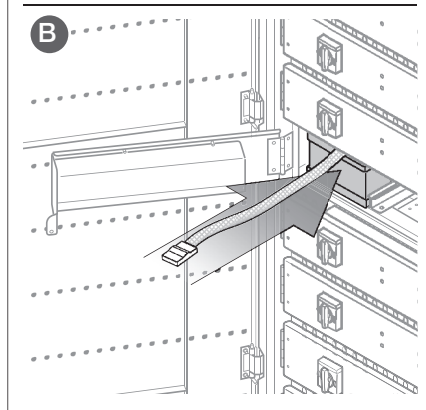
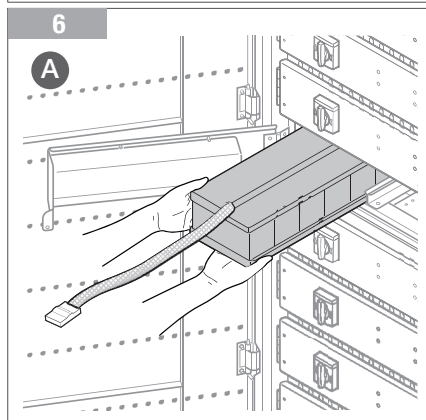
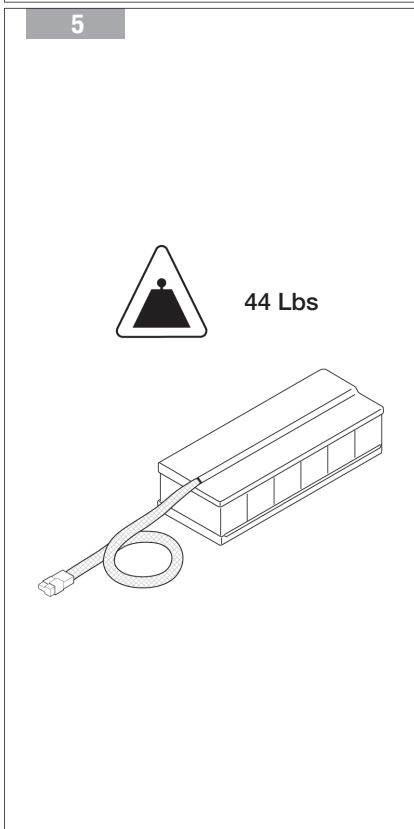
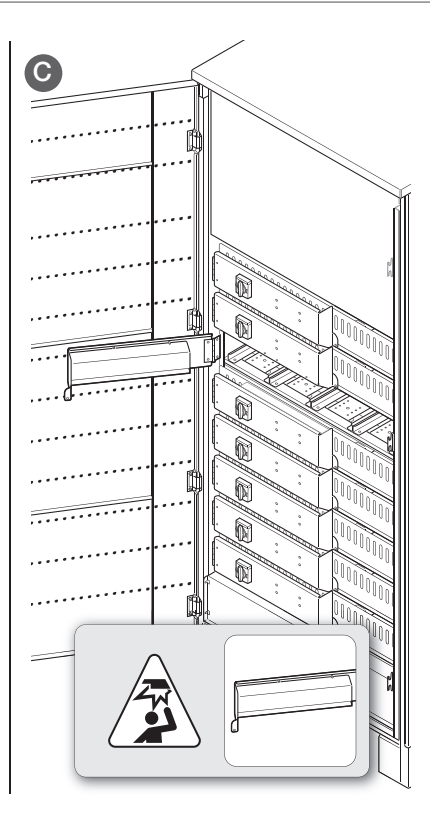
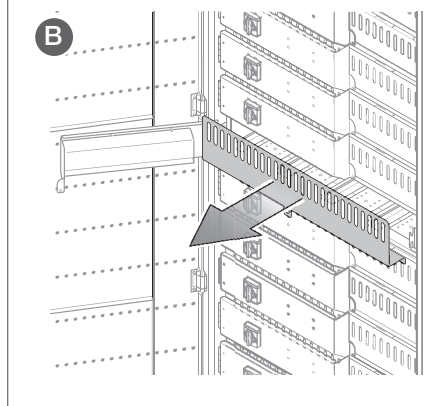
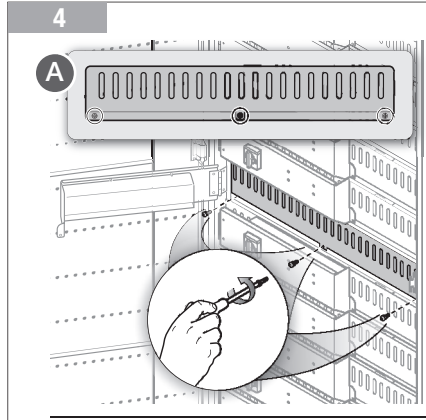
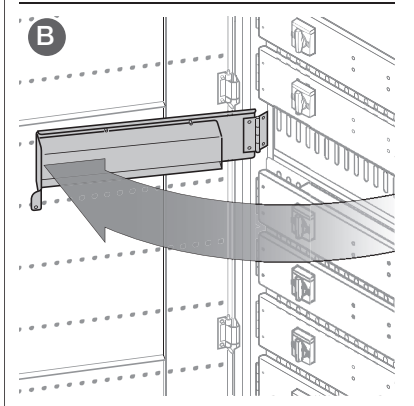
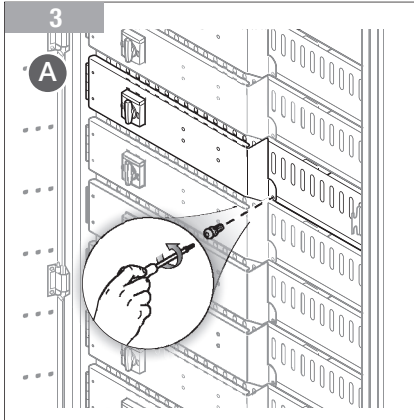
BATTERY MODULE CONNECTION

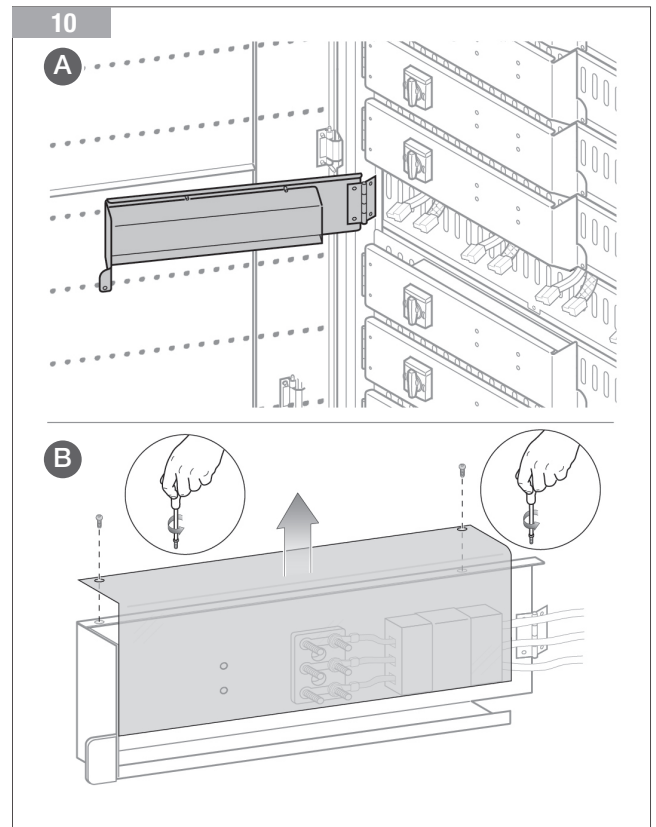
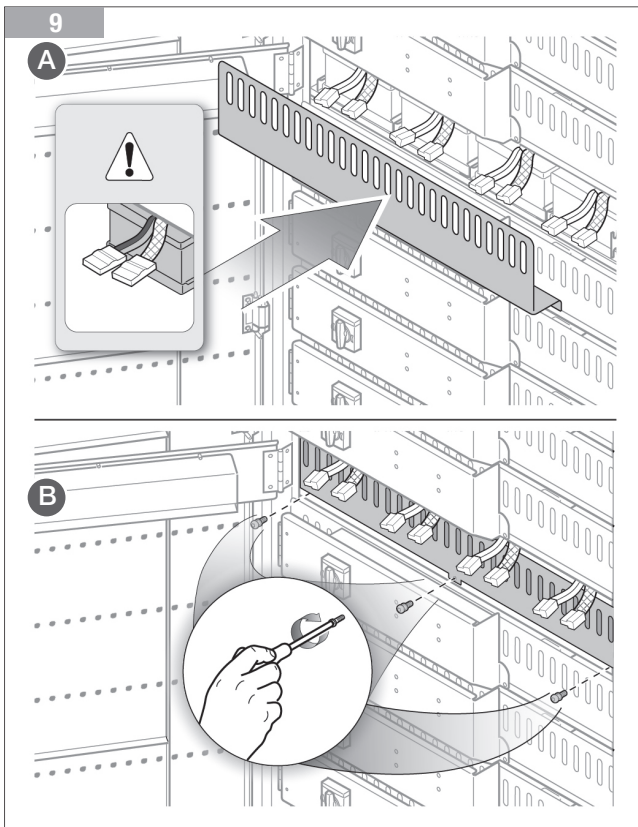
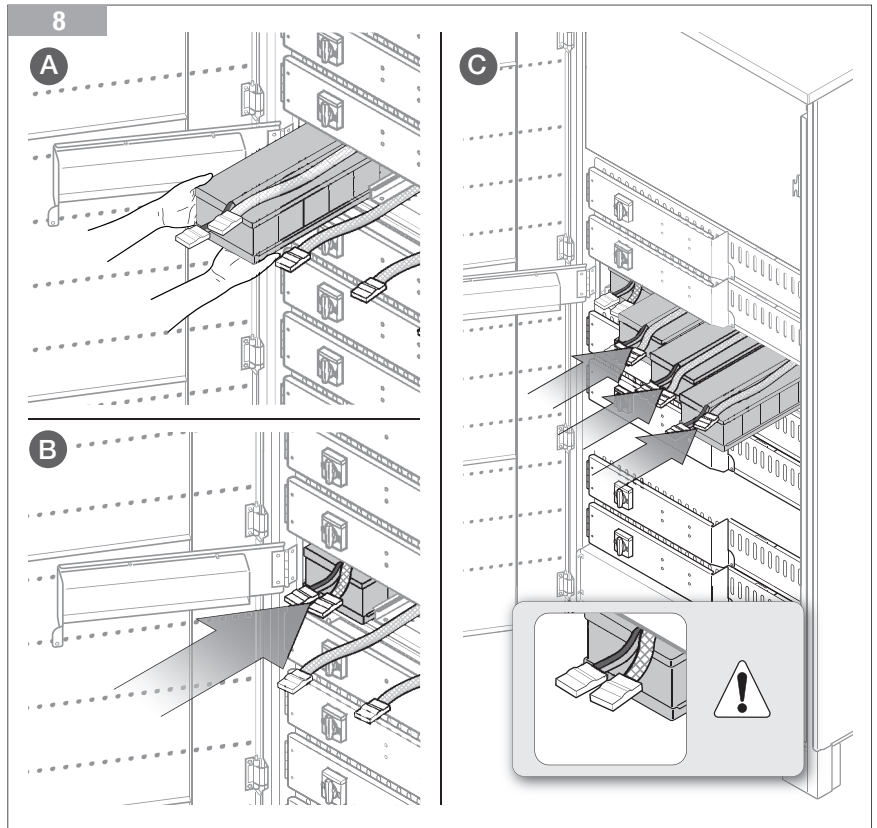
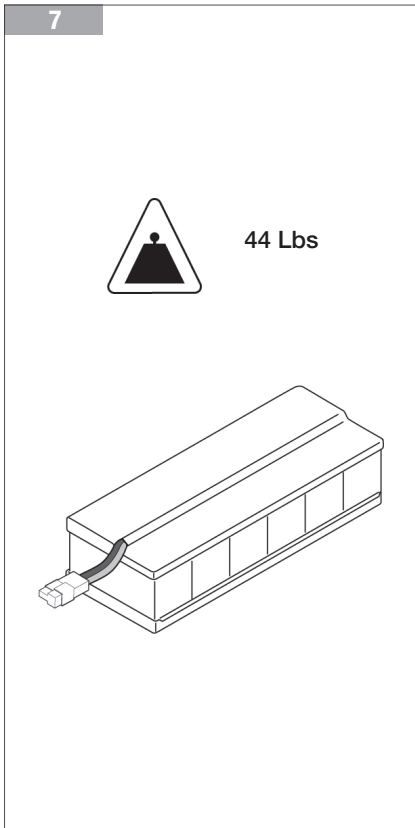
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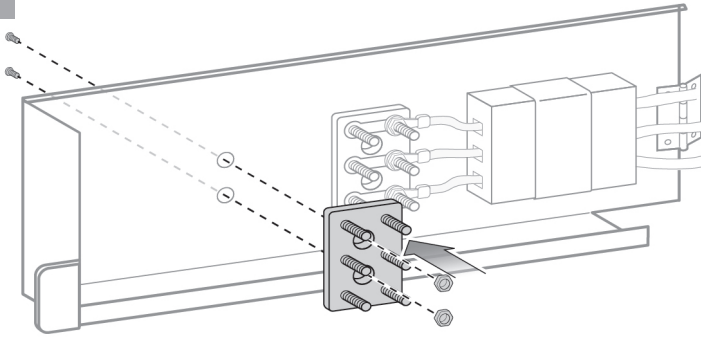




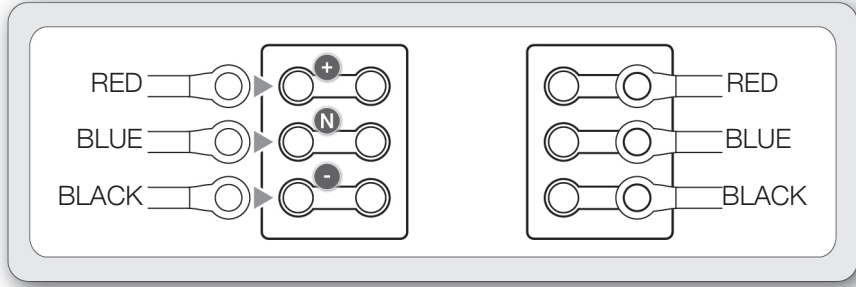
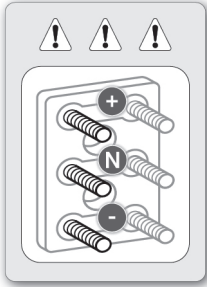
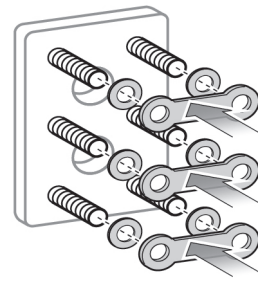


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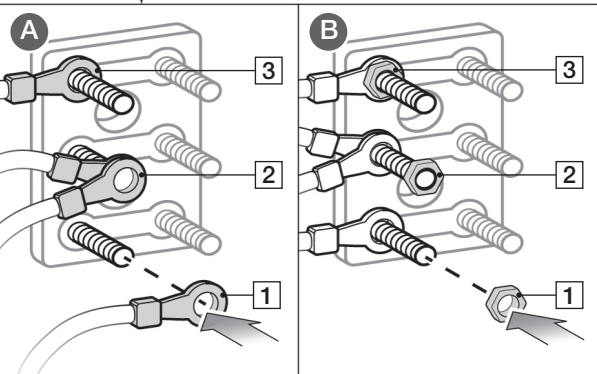
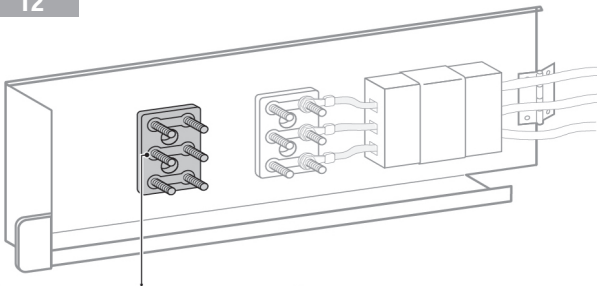
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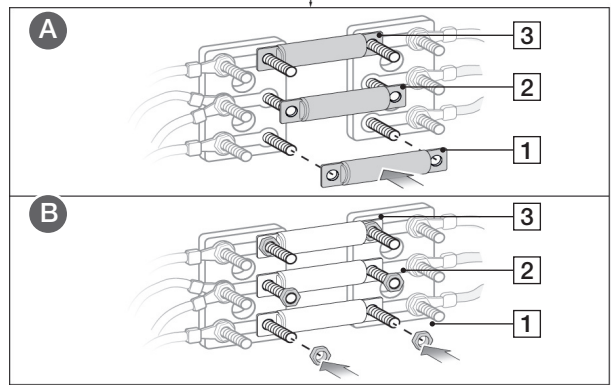
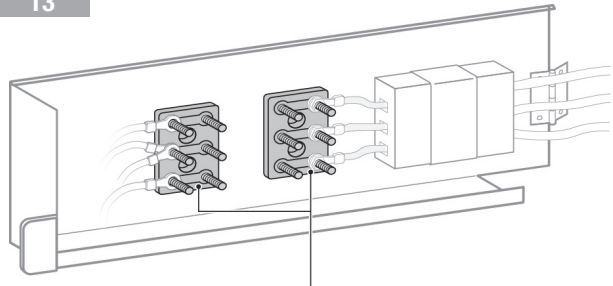
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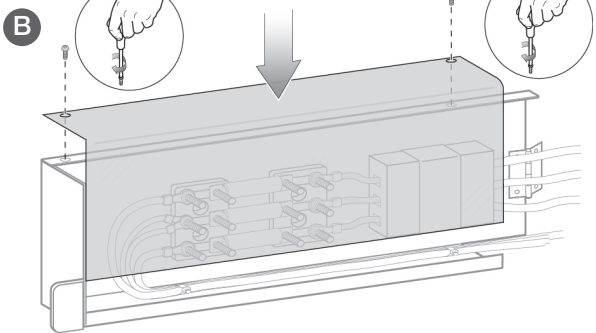
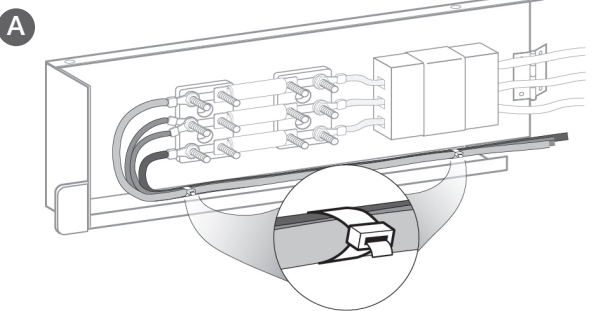
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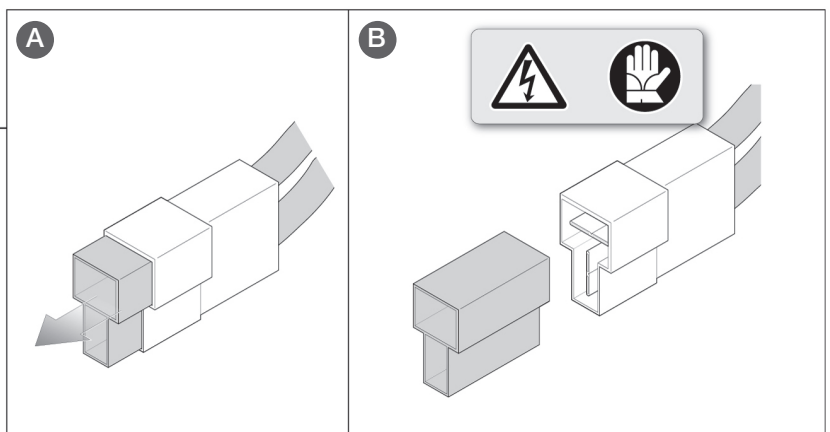
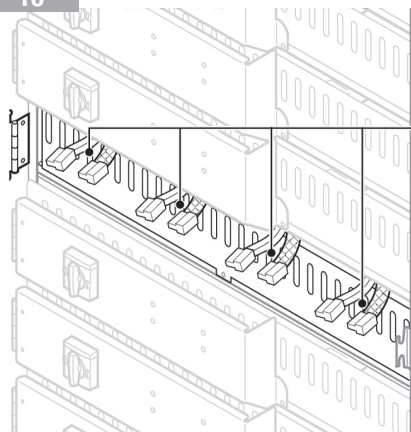
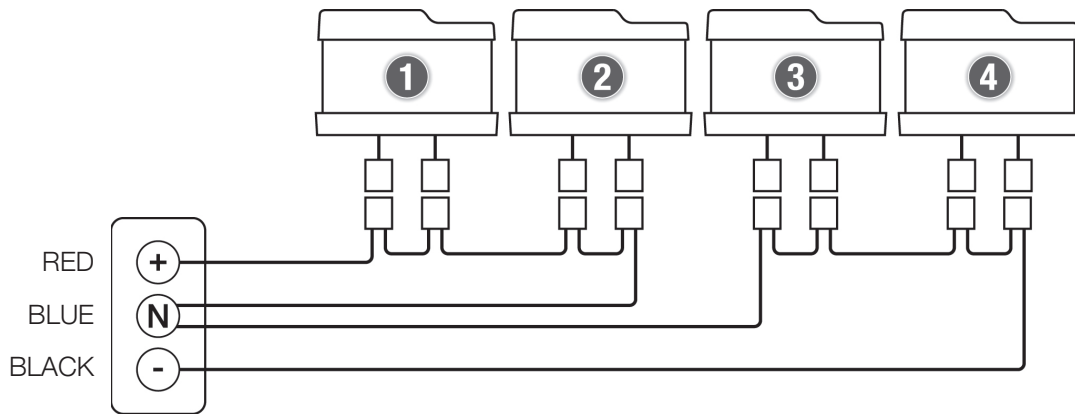
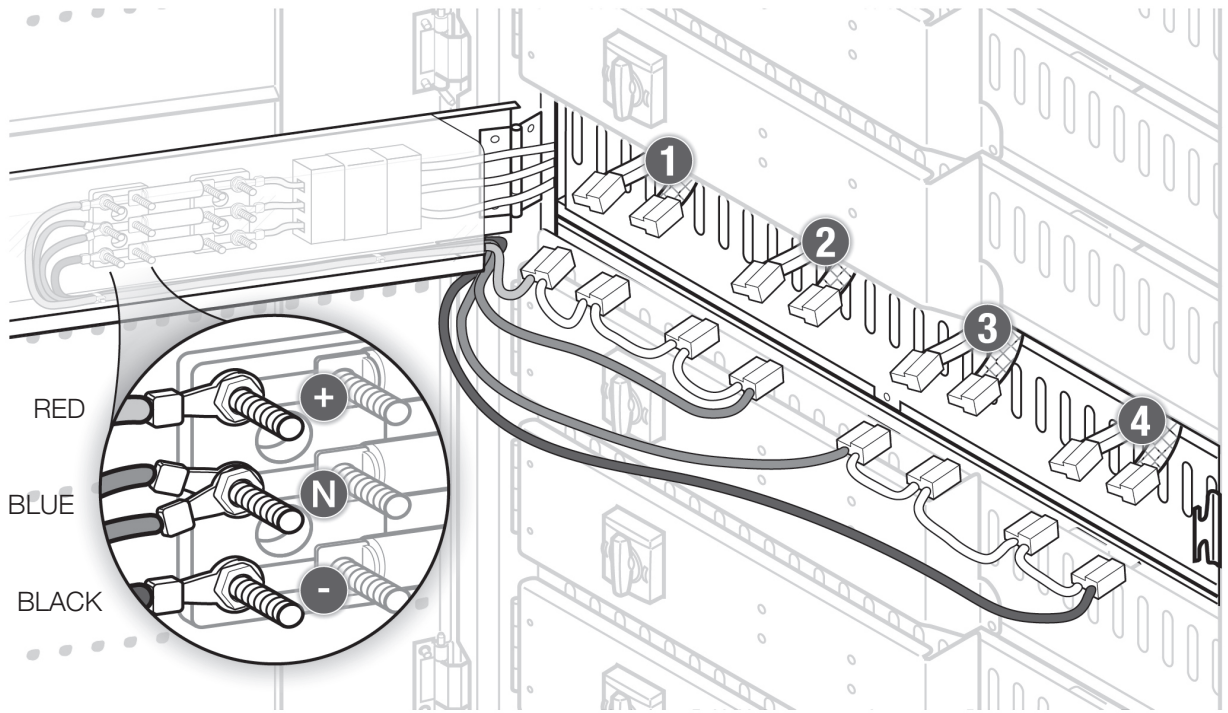


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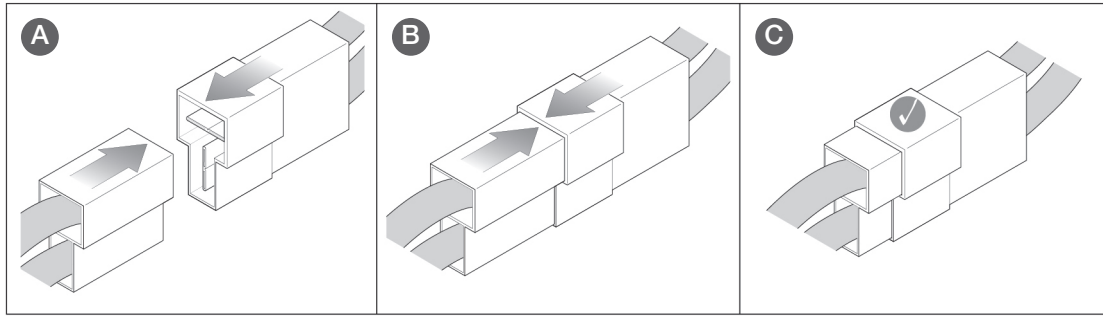


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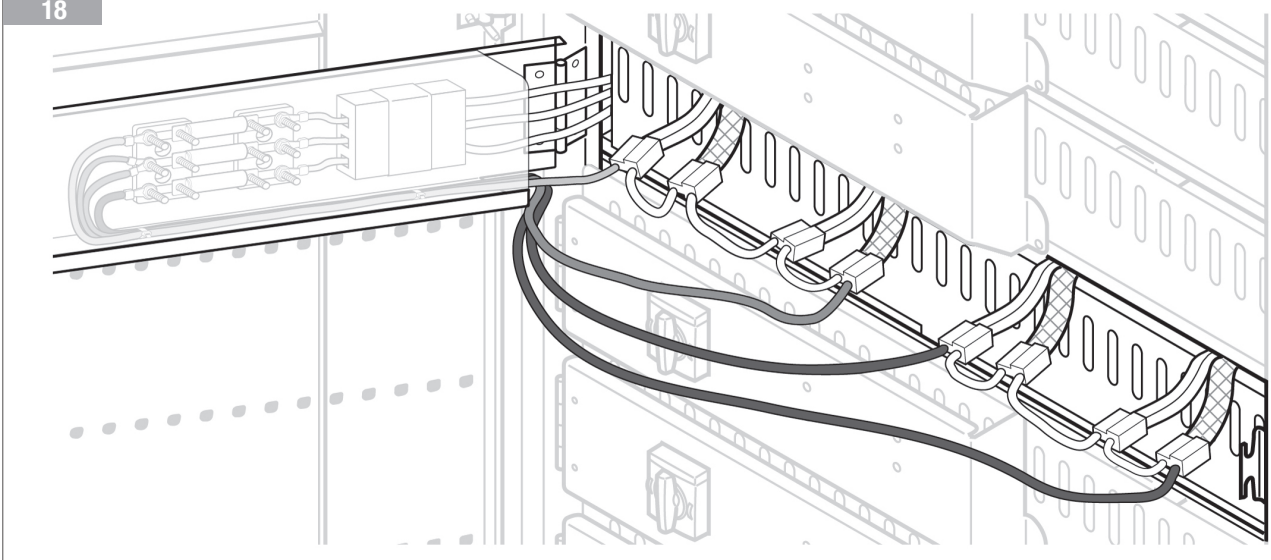




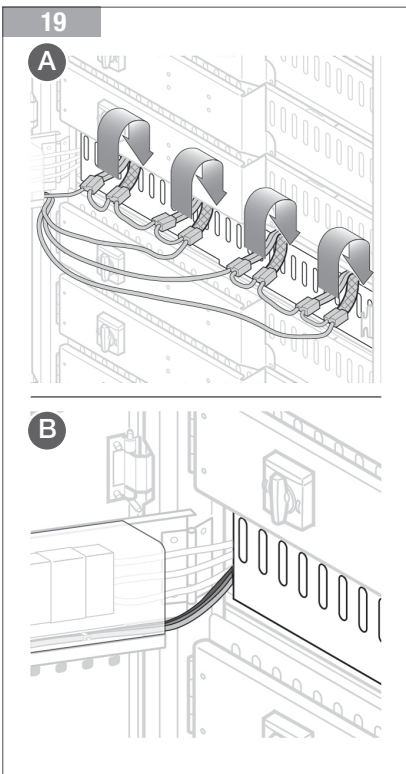
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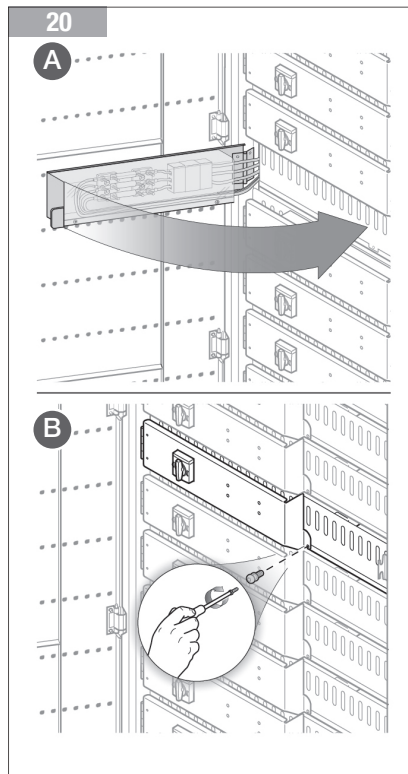
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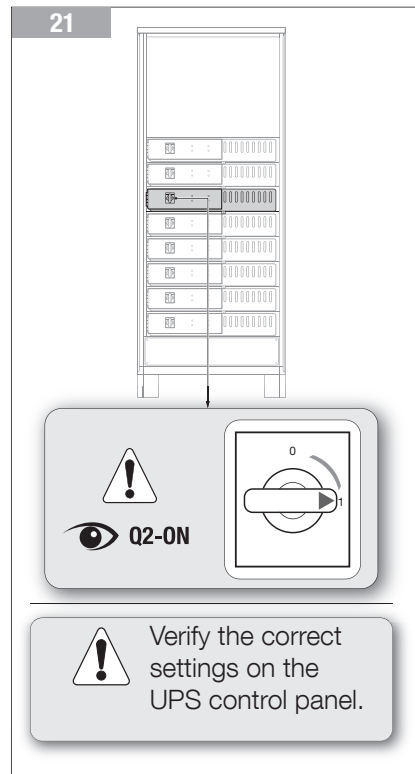
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21



5. Technical specifications

Technical specifications	
Battery	+288 VDC, -288 VDC 9 Ah/string ⁽¹⁾
Battery settings ⁽²⁾	144 cells - 9 Ah per shelf
Matching (number of batteries per power module)	at least 1 battery shelf for each power module
Dimensions (L x D x H)	800 x 950 x 1989 mm 2' 7" 1/2 x 3' 1" 13/32 x 6' 6" 5/16 ft.
Weight (empty cabinet)	573 lbs
Weight (cabinet with batteries)	3854 lbs
Battery shelf weight	309 lbs
Protection level	IP20 NEMA1
Operating temperature ⁽³⁾	32 to 104 °F (59 to 77 °F recommended for longer battery life)
Ambient storage and transport temperature ⁽³⁾	23 to +104 °F max (recommended: 77 °F)
Relative humidity (condensation-free)	up to 95%
Battery recharging	
Tambient ≤ 77 °F	every 6 months
77 °F ≤ Tambient ≤ 86 °F	every 4 months
86 °F ≤ Tambient ≤ 95 °F	every 3 months
95 °F ≤ Tambient ≤ 104 °F	every 2 months
Tambient > 104 °F	not recommended
Standards	
Safety	UL1778 CSA C22.2 N. 107.3-05
Degree of protection standard	NEMA A (IP20)
SEISMIC	OSHPD Pre-approval (optional)

(1) 8 strings max.

(2) Refer to the data label attached to the cabinet.

(3) General instructions for the application of lead batteries. For further details, see the battery manufacturer's instructions.

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POWER
CONVERSION



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- Safety of persons and assets
- Measurement of electrical parameters
- Energy management
- Energy quality
- Energy availability
- Energy storage
- Prevention and repairs
- Measurement and analysis
- Optimisation
- Consultancy, commissioning and training

A worldwide presence

12 production sites

- France (x3)
- Italy (x2)
- Tunisia
- India
- China (x2)
- USA (x3)

28 subsidiaries and commercial locations

- Algeria • Australia • Belgium • China • Canada
- Dubai (United Arab Emirates) • France • Germany
- India • Indonesia • Italy • Ivory Coast • Netherlands
- Poland • Portugal • Romania • Singapore • Slovenia
- South Africa • Spain • Switzerland • Thailand
- Tunisia • Turkey • UK • USA

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